Advanced Energy Economy Institute
1000 Vermont Ave. NW, Floor 3
Washington, DC 20005

April 28, 2017

VIA E-MAIL

Ms. Elizabeth Ronaldo
Chief Clerk
Illinois Commerce Commission
527 East Capitol Avenue
Springfield, Illinois 62701

Re: Case 17-0142 – Regarding Illinois' Consideration of the Utility of the Future: "NextGrid" Grid Modernization Study

Dear Ms. Ronaldo:

The Advanced Energy Economy Institute (AEE Institute) submits these comments in response to the Illinois Commerce Commission's Resolution, dated the 22nd of March, in the matter referenced above.

Respectfully Submitted,

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Comments of Advanced Energy Economy Institute in Response to the Illinois Commerce Commission's NextGrid Resolution

Introduction

Advanced Energy Economy Institute ("AEE Institute") commends the Illinois Commerce Commission ("ICC" or "Commission") for issuing its resolution establishing the NextGrid initiative to "develop a shared base of information and work to build consensus on critical issues facing the electric utility industry."[1] This is a timely effort as commissions around the country are taking proactive steps to address the substantial changes that are taking place within the electric industry. Technology, customer expectations, and state policies are changing quickly, placing pressure on current regulatory frameworks, rate designs, and utility business models, which were developed to address the technology and policy concerns of the last century. AEE Institute appreciates the opportunity to participate in and support the Commission's NextGrid initiative.

AEE Institute is a charitable and educational organization whose mission is to raise awareness of the public benefits and opportunities of advanced energy. AEE Institute is affiliated with Advanced Energy Economy (AEE), a national business association representing leaders in the advanced energy industry. AEE supports a broad portfolio of technologies, products and services that enhances U.S. competiveness and economic growth through an efficient, high-performing energy system that is clean, secure, and affordable. AEE Institute is working with AEE and its member companies to develop these comments, and is referenced as "the advanced energy community," "we," and "our."

AEE Institute has substantial experience in participating in grid modernization and "utility-of-the-future" proceedings across the country. We have been an active party in the New York Reforming the Energy Vision proceeding for the past three years, and have participated in other proceedings in California, Minnesota, the District of Columbia, and Maryland. As an organization with stakeholders that provide a range of technologies and services, we balance a wide variety of interests and address issues with a technology-neutral perspective. Every state has different goals, legal requirements, and market conditions, and so therefore takes a different approach to grid modernization. Illinois in particular has been more proactive than most states in developing new regulatory constructs. Illinois was one of the first states to restructure, it furthered the restructuring model with the creation of the Illinois Power Agency, and it reformed the ratemaking process and leapfrogged most states in deploying modern grid infrastructure with

[1] *Resolution Regarding Illinois' Consideration of the Utility of the Future: "NextGrid" Grid Modernization Study*, Proceeding 17-0142, P.2.

the Energy Infrastructure Modernization Act. In these comments, we provide our recommendations for the process and content for the NextGrid initiative based on our experience in other states, while keeping in mind the unique characteristics of Illinois.

Process

To the extent possible, the Commission should structure the process so that it allows ease of participation from a broad variety of stakeholders. Encouraging participation from parties that do not normally participate in the Commission's proceedings will benefit the initiative by including diverse perspectives and expertise from across the country. In order to accomplish this, we recommend that all meetings be accessible through teleconference and webcast. In addition, we recommend all meetings be recorded and the recordings be made publically available on the Commission's website as very few participants will be able to attend every meeting in person. We also recommend that the rules of engagement should promote accommodation and ease of access and avoid the stricter proceeding rules that accompany litigated proceedings.

The development of a clear set of goals should be an initial focus of stakeholder engagement. The initiative, with guidance from the Commission, should first determine what NextGrid will aim to achieve. We recommend that all of the goals should aim to benefit, either directly or indirectly, the customer. These could cover several topics such as, but not limited to:

- The benefits of a modernized grid, such as service quality and reliability;
- Decreasing the cost of service by incorporating new technology and encouraging competition in grid solutions;
- Empowering customers to control costs through better data access, knowledge, options, and technology;
- Enabling enhanced utility performance and services through performance-based regulation and evolving the utility business model; and
- Electrification of transportation and beneficial fuel switching that drives progress toward broader decarbonization goals.

The development of goals through a collaborative process will help develop buy-in and increase engagement of stakeholders. These goals will also be valuable for framing discussions and keeping the proceeding focused.

After setting goals, the collaborative should develop a roadmap for addressing topics. While there is a temptation to address multiple issues at once, especially since many are interrelated, it risks overwhelming stakeholders and facilitators. The development of the roadmap should take into consideration

the relationship between topics and order them in a logical sequence. We recommend that foundational issues, such as the roles of market participants and utility business model issues, should be addressed prior to tackling hot button issues such as rate design that may seem more timely. Based on our experience, laying the ground work through resolving foundational issues will pay dividends in making more contested issues easier to address. Below is our recommendation for the sequence and topics to be adopted in a roadmap.

Topics

1. Market Design and Roles of Market Participants

The structure of future electricity markets and the roles of the utility, third parties, and customers is a foundational question that should be addressed first. There are at least two basic options for market design and the role of a 21st century utility in a restructured state. Both involve the development of the grid as a physical and market platform. In one version, the utility operates both the physical and market platforms to integrate and coordinate assets and services owned and provided by others. In the second version, sometimes called an independent distribution system operator model (IDSO), the utility owns and invests in the network infrastructure of the system but leaves the market operations and integration functions to an independent entity (similar to the role of an ISO or RTO but at the distribution level). The establishment of the utility role determines the basic structure of the market.

The scope of what the utility can own and the services it can provide should be defined in detail so that parties understand what elements of the system are regulated utility services and what elements are competitive. We have supported in other proceedings that the regulated utility should be limited to services that are truly monopoly functions. While this would preclude the utility from offering services and owning assets that could also be offered by the competitive market,[2] if the utility functions as a platform, it would receive additional revenue through fees for new platform services such as dispatch, scheduling, and data services.

[2] Exceptions for utility participation in competitive services may be warranted in situations where a market is underserved or insufficiently developed. The utility may have an important role to play in overcoming market failures in undeveloped markets.

2. Utility Business Model

It is our strong belief, supported by data on market growth,[3] that the electricity grid of the future will have much higher penetration of distributed energy resources (DER).[4] The underlying drivers of cost reduction and improving performance across a range of DER technologies suggests that their importance will only grow. While DER penetration is currently relatively low in Illinois, experience in other states has shown that DER markets can expand quickly. Maximizing the benefits of DER, whether to the customers that invest in it, or to the grid as whole, should be a defining characteristic of the NextGrid initiative. To achieve this, the grid will need to become more flexible and intelligent, and as described above, we expect the role of the utility to change as a result.

The traditional cost-of-service utility business model based on earning a regulated rate of return on capital investments is not ideal for either of the market structures described above. As customers deploy more DER, the opportunity for utilities to invest in traditional distribution assets may decrease, so long as the DERs are integrated well. However, other types of investments will be necessary, and new utility services will emerge. In a high-DER future, it is beneficial to provide the utility with the motivation to operate the distribution platform in a way that leverages private assets to minimize costs, and this requires changes to the way the utility makes money. Under the current cost-of-service model, if the utility leverages an asset owned by a customer or a third party to support the grid rather than invest in its own solution, the utility will shrink its capital expenditures, its main source of profit. The utility will need other means of generating profits. There are at least three options to consider.

First, a part of the solution may be to allow the utility to earn money on certain types of operating expenses. For example, if the utility contracts with an energy storage project owner or a distributed generator to provide capacity at a peak hour and avoids the need for a new transformer, the utility could earn on that service expense just as it would have earned on installing the new transformer. The fact that the asset is owned by a third party and the utility paid for a service expense rather than a capital investment does not change the final outcome, and in fact, may be a more cost-effective solution overall. Importantly, the utility is still fulfilling its core function of maintaining the reliability of the grid, although through different means. As such, the utility's profits should not suffer because of it. The use of software as a service (SaaS) is another example. SaaS increasingly offers a superior option to the utility investing in its own IT infrastructure, yet utilities are deterred from doing this because there is uncertainty around whether they can profit from SaaS under current rules.

[3] *Advanced Energy Now 2017 Market Report*, Advanced Energy Economy. Page 63. Available at: http://info.aee.net/aen-2017-market-report

[4] We define DER broadly to include distributed generation of all types, energy efficiency, demand response, energy storage, microgrids and electric vehicles.

Second, new earnings opportunities could also come from better utility performance. Currently, utility profits are largely derived from how much capital they invest in the system rather than how well they perform and leverage those investments to benefit customers. Illinois utilities currently have a number of reliability and service related performance metrics that can result in small penalties to the utilities' allowed return on equity, and as a result of the Future Energy Jobs Bill, energy efficiency program performance is now subject to symmetrical (positive and negative) performance incentives. Performance incentives have the potential to go much further and motivate utilities on desirable outcomes such as peak demand reduction, customer bill savings, and emissions reductions through DER growth. So long as the activities provide cost savings and benefits to customers that are greater than the incentives, customers will benefit. This also has the potential to reduce some of the regulatory burden on the Commission by encouraging utilities to identify cost savings within their own operations and investment plans rather than rely entirely on Staff review. Instead, the Commission would be focused on the achievement of outcomes, and less on how the utilities achieve them. Utilities will always have better information about their systems than regulators. Performance incentives that better align utility shareholder interests with desired policy outcomes and the interests of customers have the potential to provide the utility with the motivation to leverage this knowledge to deliver cost reductions and improved service quality.

Third, additional earnings can come from fees that the utility charges for operating the grid as a platform. Integrating DER and leveraging customer and third-party owned resources to support the grid will result in additional transaction costs for the utility. The utility should be able to recover these costs with a reasonable profit margin from fees assessed to the users of the platform. As the market for these services grows, so will the utility's earnings, providing an incentive for the utility to support market growth rather than view it as a competitive threat.

3. Data Access

Access to system and customer data is necessary for the growth of new products and services and for the creation of a vibrant DER market. Customer usage information is a critical component for a range of services to customers, such as distributed generation, energy efficiency improvements, and devices that help customers respond to more advanced rate designs. The Commission has already established data access policies that are ahead of many of its peers. Current rules provide customers and third parties with access to usage data, and recent efforts by the Commission and Commonwealth Edison allow third-parties to have fee-based access to aggregated, anonymized data from AMI-enabled customers. While Illinois is already ahead of many states, the report should consider how data access rules should be modified to enable the market designs established at an earlier stage of the collaborative.

We understand that some of the following customer data access issues have been settled while others are still under consideration as part of the Open Access Data Framework. Customers should have quick, easy, and free access to their own data and should be able to provide it to a third party through a method that is also fast and hassle free. Customers have paid for the rollout of AMI in Illinois, so they should be able to access granular data in a timely fashion without additional fees. Customer access to data should be through uniformly implemented industry standards, and customer authorization to provide the data to third parties should be through a streamlined, "one-click" process on a single website.

Utility system data, such as the location, cost, and load profile of constraints on the distribution system, should also be available to qualified third parties. Providing this system data will allow third parties to develop solutions to meet system needs that may be more cost-effective than traditional utility solutions. This increases transparency and allows third parties and new technologies to participate to a greater degree in distribution system planning, which will be important for deriving the greatest benefit from DER.

4. Distribution System Planning

As the utility platform grows and the market for customer and third party-provided services expands, the distribution network becomes increasingly important as a marketplace for connecting and integrating distributed resources. Distributed resources also play a greater role in the design and functioning of the distributed network. Grid needs that could previously only be fulfilled by utility investments in transformers, conductors, and equipment can increasingly be met through a variety of means, such as rates that encourage customers to use less energy (or generate more) at peak hours, utility-run programs that offer payments for the dispatch of resources, or utility procurement of resources, such as storage at a substation. These new methods of meeting system needs will only be more beneficial than traditional solutions some of the time, but as experience in other states has shown,[5] the cost savings and benefits over traditional utility investments can at times be significant. An effective, integrated distribution system planning process that compares different grid solutions on a level playing field requires changes, as mentioned above, to the utility business model and access to system data.

Determining which solutions should be chosen requires a Benefit Cost Analysis (BCA) framework that is robust enough to handle a variety of solutions and delivery methods (rates, programs, and procurement) and compare them on an apples-to-apples basis. Another key issue is to determine the range of cost and benefits that should be considered. Benefits such as energy and capacity are relatively easy to quantify, while others such as flexibility, reliability, fuel price certainty, and others may be more difficult.

[5] Demand-Side Resources Can Be Cheaper than Large Scale Infrastructure Upgrades, Katherine Tweed, Greentech Media, Feb 17, 2016. Available at: https://www.greentechmedia.com/articles/read/distributed-resources-gain-traction-to-avoid-grid-upgrades

Another consideration is whether to include societal benefits such as greenhouse gas reductions, which result in future and indirect cost reductions to customers. Societal benefits were considered in the Future Energy Jobs Bill as part of the justification for the Zero Emissions Credits, so there may be a solid basis for including societal benefits in the BCA for other resources.

5. Rates

Advanced rate designs have significant cost savings potential for customers through shaving peak demand and avoiding the need to increase distribution system capacity. Rates can also help customers reduce wholesale capacity needs and save on capacity costs embedded in their energy rates. There are a number of options for new rate designs that can help customers shift their usage to off-peak periods, such as time-of-use rates, critical peak pricing, and coincident peak demand charges. Illinois is already a national leader in advanced rate designs, with several utilities providing customers with the option of participating in peak time rebate programs and hourly energy pricing. Most of these programs are targeted only at the supply portion of the bill. Additional system costs could be avoided through applying various Time Varying Rate designs to the delivery portion of the bill as well.

Each customer will have different needs, different technology on-site, and varying degrees of comfort with more advanced rate structures. Because of this, customers should be able to choose from a range of rate designs that fit their needs and habits. Expanding options will allow for increased customer participation in advanced rate designs. Education is also a critical factor for customer participation. The success of new and existing optional rates depends on robust marketing and education efforts so that customers are aware of the personal and societal benefits of their participation. Intelligent and sophisticated marketing efforts that employ analytical solutions can also allow for modern customer communication to support new rate designs and encourage increased participation, awareness, and empower customers to reduce bills.

Conclusion

AEE Institute appreciates the opportunity to provide the Commission with these comments. We look forward to our continued involvement in this important collaborative.